

REMARKS

The Applicant has filed the present Response in reply to the outstanding Official Action of July 6, 2005, and the Applicant believes the Response to be fully responsive to the Official Action for the reasons set forth below in greater detail.

At the onset, the Applicant would like to thank the Examiner for indicating that Claims 2-5, 7 and 10 have allowable subject matter and would be allowed if rewritten in independent form including the rejected base claim and all intervening claims.

However, since Applicant respectfully disagrees with the principle rejection, Applicant submits that such amendment is not needed at this time.

In the Official Action, the Examiner rejected Claims 1, 6, and 8-9 under 35 U.S.C. § 103(a) as being unpatentable over Giroux et al., United States Patent No. 6,618,378 (hereinafter "Giroux" in view of Goldman et al., United States Patent No. 6,829,224 (hereinafter "Goldman")).

The Examiner avers that Giroux teaches all of the claim elements of Claim 1 except that the reference does not teach "a plurality of packet FIFOs, and said plurality of cell FIFOs to each of which the ATM cells output from a corresponding one of said plurality of packet FIFOs." See paragraph 5 of the Official Action. However, the Examiner asserts that Goldman teaches these features. Thus, the Examiner concludes that "it would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of Giroux and Goldman to provide a plurality of packet FIFOs, and said plurality of cell FIFOs to each of which the ATM cells output from a corresponding one of said plurality of packet FIFOs **because it would smooth a rate of cell discards for random early detection.**" Id. (Emphasis Added)

Applicant respectfully disagrees with the Examiner's rejection and traverses with at least the following analysis.

Applicant submits that there is no motivation to combine the references. It has been held by the courts that to establish *prima facie* obviousness, there must be some suggestion or motivation to modify the reference. See In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). The absence of such a suggestion to combine is dispositive in an obviousness determination. See Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1383 (Fed. Cir. 1997). "The showing of a motivation to combine must be clear and particular, and it must be supported by actual evidence." Teleflex, Inc. v. Ficosa North American Corp., 299 F.3d 1313, 63 USPQ2d 1374 (Fed. Cir. 2002) (Citing In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999)).

There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). The motivation can come from the nature of the problem, the reference, or common knowledge. Id. The Federal Circuit stated:

[V]irtually all [inventions] are combinations of old elements. Therefore an Examiner may often find every element of a claimed invention in the prior art. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an Examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the Examiner to show a motivation to combine the references that create the case of obviousness. The Board [of Appeals] did not, however, explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination. ... To counter this potential weakness in the obviousness

construct **the suggestion to combine [modify] requirements stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.**

In re Rouffet, 47 USPQ2d 1457-58 (Fed. Cir.1998) (citations omitted, emphasis added).

The Examiner makes no showing of the state of the art at the time of the invention evidencing that those skilled in the art appreciated the problems solved by the present invention. That the combination of references *would result* in a claimed invention is only part of the 35 U.S.C. § 103 analysis, the Examiner must also show a motivation or suggestion for modifying the references, this the Examiner has not done. Such conclusory statements are insufficient to show a motivation or suggestion to modify the references. Ecolochem, Inc. v. Southern California Edison Co., 227 F.3d 1361, 1372, 56 USPQ2d 1065, 1073 (Fed. Cir. 2000).

Additionally, the mere fact that the reference can be combined or modified does not render the resultant combination obvious. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Although a prior art reference “may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.” Id. at 682. The alleged motivation or advantage of the combination, as suggested by the Examiner, “because it would smooth a rate of cell discards for random early detection” has little or no relationship with the features at issue. In fact, the features that cause the smoothing of the rate of cell discards is the threshold circuit and cell routing/modification circuit. See Goldman Col. 5-7. For example, Goldman states that

[s]ince the instantaneous discard probability (P_{INST}) is added to the accumulated probability (P_{ACCUM}), **the accumulation factor is provided to prevent P_{ACCUM} from growing too fast and causing**

excessive cell (and frame) discards. With each successive frame that is accepted, the accumulation probability increases by the current frame's instantaneous discard probability multiplied by an accumulation factor. Consequently, the discard probability increases over time until a frame is discarded. Thereafter, the accumulated probability is reset to zero. **This reduces clumping of discarded frames in time, smoothing the discard interval. Smoothing the discard interval reduces TCP global synchronization, thereby enhancing TCP performance.** Additionally, if a class of service queue's cell count is zero, the accumulated probability for that queue may be optionally reset to zero. This may be useful because the average cell count Q_{AVG} may lag significantly behind the current cell count, and inflating the discard probability may not be desirable when the class of service queue is empty.

Nowhere within this passage is there any mention of the plurality of queue groups or plurality of cell FIFOs. **The inventive calculation and not the plurality of queue groups or plurality of cell FIFOs accomplish the smoothing of the discard interval.** Accordingly, there is no motivation to combine the references.

Even if there were a motivation to combine the references, the hypothetically combined system would not exhibit each and every feature or limitation recited in Claim 1. Specifically, the combined system fails to teach or suggest a plurality of packet FIFOs.

The plurality of queue groups 310(1-N) is not the same as the claimed plurality of packet FIFOs.

Goldman describes that “the cell queue memory 135 is broken up into a **plurality of queue groups** 310.₁ -310._N ("310") which are associated with the number of output ports (or virtual interface) supported. Each queue group 310 is further broken up into one or more class of service queues. For example, queue group 310, includes, for example, sixteen class of service queues 315.₁ -315.₁₆ ("315"). The number of class of service queues is a matter of design choice and may vary from one implementation to another. The class of service queues 315 typically

represents priority levels depending on the **cell type**". See Col. 4, lines 45-56. Additionally, "incoming **cells** are stored at the end of the class of service queue that corresponds to the **cell's** VC, while outgoing **cells** are retrieved from the head of the class of service queue that corresponds to the **cell's** VC." Id. at 65-67. Based on the queue cell counts, and priority information of the queues, the departure controller 250 then determines which queue to service. The departure controller 250 directs the queue control circuit 240 by way of signal line(s) 255 to retrieve cells from the cell queue memory 135 and place them in one of the output FIFOs 265.₁ - 265._N.

Goldman constantly refers to "cells" and not "IP packets". It is clear that the plurality of queue groups are not **packet** FIFOs, rather they appear to be just an input buffer prior to being transmitted to the cell FIFOs. Additionally, it is not clear from Goldman whether the plurality of queue groups is a FIFOs memory, as specifically claimed.

In contrast, in the claimed invention, IP packets are stored in the respective FIFO 111 and then each are divided into ATM cells and then written to corresponding cell FIFOs. A packet FIFO is allocated to a particular VCI.

Accordingly, Applicant submits that the hypothetically combined references are patentably distinct from Claim 1, as the references fail to teach, suggest or render obvious each and every limitation of Claim 1.

Applicant further submits that Claim 6 is patentable based up its dependency, whether directly or indirectly, from Claim 1.

Additionally, with respect to Claim 8, Applicant respectfully submits that Claim 8 is patentable over the cited references based upon the above-identified reasons and based upon at least the following additional reasons.

The Giroux reference does not teach discarding an entire packet. Giroux teaches that “[c]ells are discarded in an ATM network during traffic congestion when buffers at the nodes of the network become full or near full. Cells transmitted over VCs with higher levels of service are less likely to be discarded than cells transmitted over VCs with lower levels of service.” See Col. 1, lines 55-60. Giroux further teaches that:

[i]f the queue 26 becomes full then all incoming cells will be lost regardless of their priority. Therefore, in order to ensure that there will be room for high priority cells in the queue 26, the CLP field of incoming cells may be checked so that **lower priority cells can be discarded** and not stored in the queue in order to leave room for the possible arrival of higher priority cells. One method of doing this involves checking the size or length of the queue whenever an incoming cell is received. **If the queue size is within a predetermined discard range then the cell may be discarded if its CLP field indicates that the cell is not high priority...**Cell discard decisions may be based on other congestion measures instead of queue size.

See Col. 7, lines 18-40.

First, Giroux describes that “cells” are discarded, not entire packets as specifically claimed. Second, the reference teaches that cells are discarded when a queue size is within **predetermined discard range if its CLP field indicates that the cell is not high priority**. This is not a teaching that “when any one of said **plurality of packet FIFOs** overflows, said IP scheduling/format converting section discards an entire packet.” If fact, Applicant submits that Giroux fails to teach a plurality of packet FIFOs, a fact that the Examiner admitted to in paragraph 5 of the Official Action.

Accordingly, Giroux does not teach or suggest all of the features as recited in Claim 8. Therefore, Applicant submits that Claim 8 is patentably distinct from the cited references.

Furthermore, Applicant respectfully submits that Claim 9 is patentably distinct from the cited references based upon its dependency from both Claims 1 and 8 and based upon the above-identified reasons.

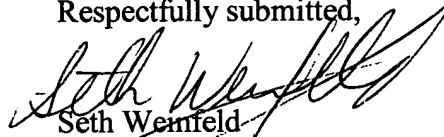
Lastly, Applicant disagrees with the Examiner's assertion that the title is not descriptive. Applicant believes that the title of the invention is fully descriptive. However, Applicant notes that the title is under the discretion of the Examiner and may be changed by the Examiner.

M.P.E.P. § 606.01.

For all the foregoing reasons, the Applicant respectfully requests the Examiner to withdraw the rejections of Claims 1, 6, 8 and 9 pursuant to 35 U.S.C. § 103(a).

In conclusion, the Applicant believes that the above-identified application is in condition for allowance and henceforth respectfully solicits the Examiner to allow the application. If the Examiner believes a telephone conference might expedite the allowance of this application, the Applicant respectfully requests that the Examiner call the undersigned, Applicant's attorney, at the following telephone number: (516) 742-4343.

Respectfully submitted,



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